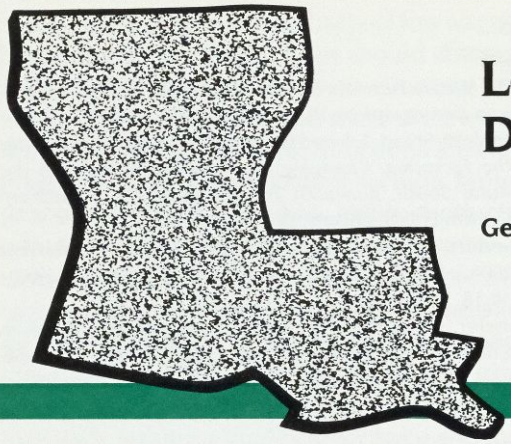

Louisiana: Prospects for a Diversified Economy

Gene D. Sullivan

Louisiana has hit upon exceedingly hard times. During the early years of this decade, when much of the nation was in recession, robust oil markets spurred the state's rapid expansion, making Louisiana the leader in southeastern economic growth. The oil price collapse of 1985-86, however, reversed the state's stance. Louisiana's total employment essentially stopped growing in 1985 and declined the following year, while annual employment growth for the Southeast as a whole averaged well above 3 percent. Over a portion of those two years, the state's unemployment rate, which had hovered in the 6 to 7 percent range for most of the 1970s, soared to over 14 percent. The unemployment rate for the region reached its zenith at slightly above 11 percent during 1983. By the time Louisiana's unemployment peaked in late 1986, the regional figure had dropped under 8 percent.

Lack of Diversification

Louisiana's economy is so tied to the energy industry that the downturn in oil prices either arrested or turned back growth in nearly all its sectors. Even the nonmanufacturing sector, which normally supports economic growth when manufacturing declines, lost around 100,000 jobs from the peak level in 1984—roughly twice as many as it normally adds each year. With this economic reversal, Louisiana's population ceased to grow and the work force actually shrank. Whereas in the 1970s Louisiana rapidly drew in out-of-state workers for oil-related jobs, in 1986 a swelling tide of adults began leaving the state to look elsewhere for employment. Even though employment opportunities improved somewhat during 1987, at year's end the state's labor force still had risen only slightly from its December 1986 level.

Can Louisiana's economy regain a healthy growth rate? Unfortunately, a return to the brisk pace of the 1970s seems improbable any time soon. Oil production is unlikely to achieve the exuberant level it had reached after the Organization of Petroleum-Exporting Countries (OPEC) first began to restrict worldwide supplies. Thus, if Louisiana's economy is to move forward, the state will have to diversify into other forms of activity.

Evidence from within the region suggests that such diversification is possible. Several southeastern states whose resource bases are similar to Louisiana's, except for the presence of rich oil deposits, have registered favorable growth during the period when Louisiana's economy has suffered its greatest setback. Aside from a higher concentration of employment in mining (oil and gas extraction), what distinguishes Louisiana from other states within the Sixth Federal Reserve District are the relative proportions of manufacturing and nonmanufacturing employment. (The Sixth District comprises Alabama, Florida, Georgia, and parts of Louisiana, Mississippi, and Tennessee; see Chart 1.) In 1986, for example, Louisiana's nonmanufacturing jobs accounted for nearly 79 percent of its total employment—5 percent more than the southeastern average—and its 10 percent figure for manufacturing fell 5 percent short of the region's average. (Total employment also en-

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Louisiana's economy, long dependent on oil, gas, and petrochemical industries, was devastated by the collapse of oil prices in 1985-86. This article details the cultural, political, and environmental characteristics that have led to this one-sided economy. Long-range stability for Louisiana, according to the author, will be built on economic diversification, which can be achieved by maximizing the state's natural and human resources as well as instituting tax reforms that will render revenues less dependent on cyclical primary industries.

compasses farm and other self-employment.) By contrast, in both Georgia and Alabama manufacturing accounts for over 20 percent of total state employment.

Even what little manufacturing is present reflects Louisiana's lack of diversification. The state's employment share in the chemical industry exceeds the region's average by two-thirds and is twice Georgia's and Alabama's individual shares of chemical employment. Unfortunately, along with the energy sector, chemical manufacturing has suffered during the past two years from weakened domestic demand and reduced competitiveness against foreign producers. In those manufactured goods, such as transportation equipment, that have helped the rest of the region maintain reasonable economic growth in this decade, Louisiana tallies up considerably lower shares of activity than most of the other states.

Although employment in trade and services is proportionate with that of neighboring states, government employment claims a markedly higher share in Louisiana. Generally, government employment helps bolster an economy when adversity strikes particular sectors. However, in the case of Louisiana, where severance taxes closely link state and local government financing to oil and gas production, the decline in all energy-related activity has forced nonfederal government employment to shrink as well. By relying on a single industry as a specialized revenue source, the state has placed its economy in double jeopardy. Thus, the contraction in its relatively large government sector has only compounded Louisiana's economic problems and rendered policy responses especially difficult during the economic downturn.

Further evidence of the state's economic homogeneity is seen in mining. Despite a 40 percent contraction from 1981, when mining accounted for 6 percent of Louisiana's employment, the 1986 share of less than 4 percent was more than five times the average figure for the Southeast.

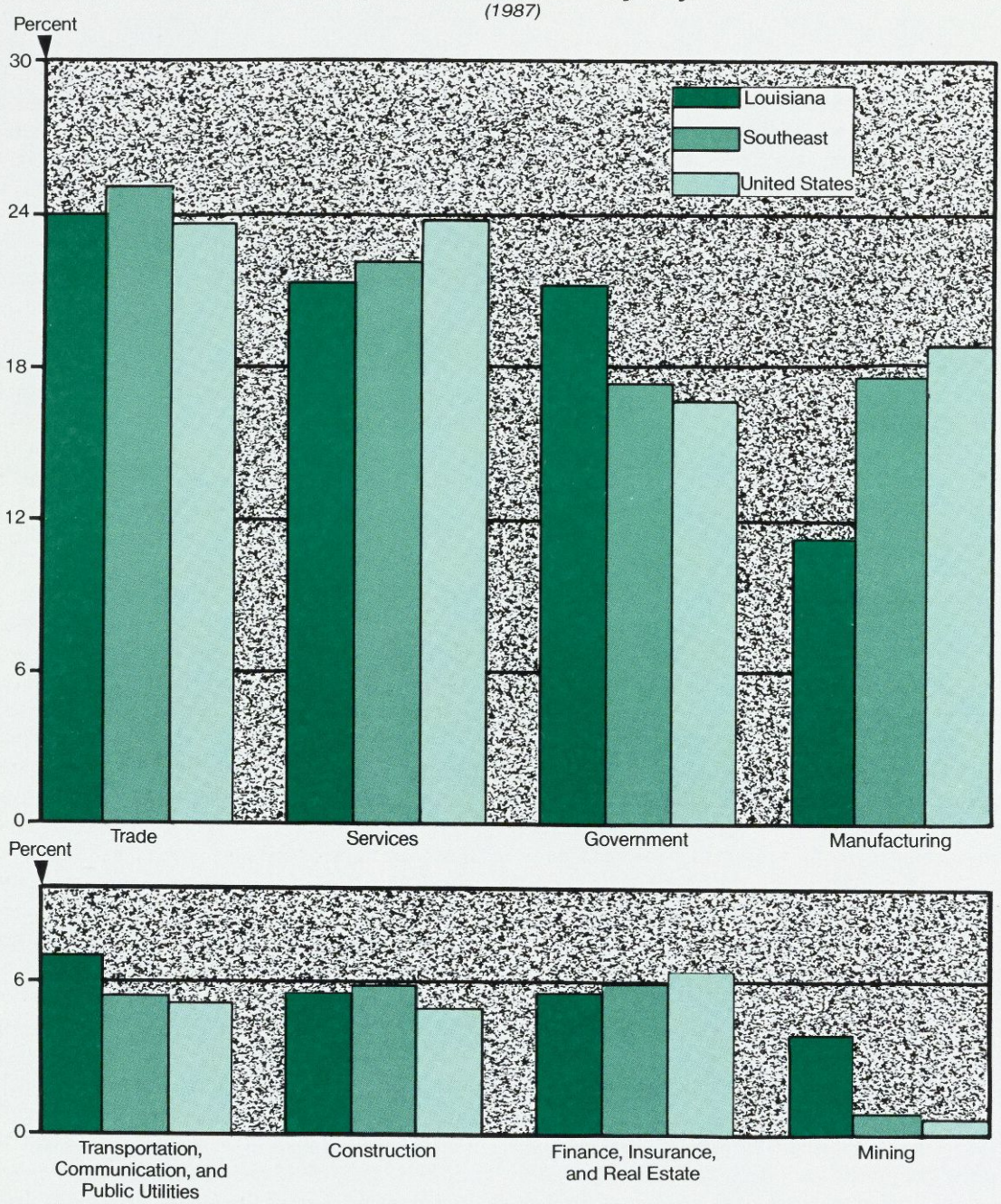
Aside from chemical manufacturing, government, and mining, the only other sector for which Louisiana's employment share surpasses the region's average is transportation and public utilities. This disparity is primarily due to water transport along the Mississippi River, numerous oil pipelines, and the broad expanse of the intercoastal canal that traverses southern Louisiana. In addition, the heavy use of rail transportation in moving commodities to Louisiana's ports significantly strengthens transportation sector employment, whose present level is 6 percent.

Characteristics of the Economy

Louisiana's particular mix of resources and special features, including its cultural and historical background, have contributed to its undiversified structure. Examining the major aspects of the state's structure and contrasting its economy with that of other states can reveal the chief causes of Louisiana's current problems and suggest some fruitful remedies. Clearly, any future restructuring of the state's economy will depend heavily on how Louisiana manages its present inventory of resources.

Population Characteristics. Perhaps the most important resource in shaping the state's economic structure, past and future alike, is its

Chart 1.
Distribution of Employment in Louisiana by Major Economic Sector
(1987)



Sources: U.S. Department of Commerce, Bureau of the Census, and reports from state employment office.

population. No doubt, Louisiana's unusual cultural and historical backgrounds have wielded a major influence in the development of the state's economy. Even today, evidence of Louisiana's early French and Spanish settlers is plainly evident in the architecture, language, and religion of a relatively broad swath of its southern area. Throughout the state, local

government divisions are called parishes rather than counties, a unique holdover from the French and Spanish system of dividing the region into ecclesiastical districts.

The Cajuns or Acadians, descendants of Roman Catholic French-Canadian settlers, account for around one-third of Louisiana's population. They are located primarily in parishes within the south-central and southwestern portions of the state. Until mid-century, many residents of these parishes spoke only Cajun French; today, some Cajun children still learn to speak French before English.

Historically Cajuns have held relatively liberal social values that contrast starkly with the conservative views that characterize much of the remainder of the state's population. Especially in Louisiana's northern portion, prevailing values are far more similar to those of the rural populations of neighboring states. Consequently, Louisiana residents tend to divide sharply on most political issues. Aside from the southern French-Catholic and northern Anglo-Saxon division, political cleavages exist between rural and urban residents and between blacks and whites. In nearly every realm of development, these three major population differences have had an impact on the state.

The rapid growth of Louisiana's population since the 1930s has influenced recent economic developments as well. The state's population growth typically had outpaced the nation's average until 1984, the onset of the economic downturn. From a twentieth century peak of 2.1 percent per year during the 1950s, Louisiana's population growth has dwindled to practically zero since 1983. By comparison, the U.S. figure moved from 1.9 percent per year in the 1950s to a nearly steady annual rate of 1.0 percent since 1975.

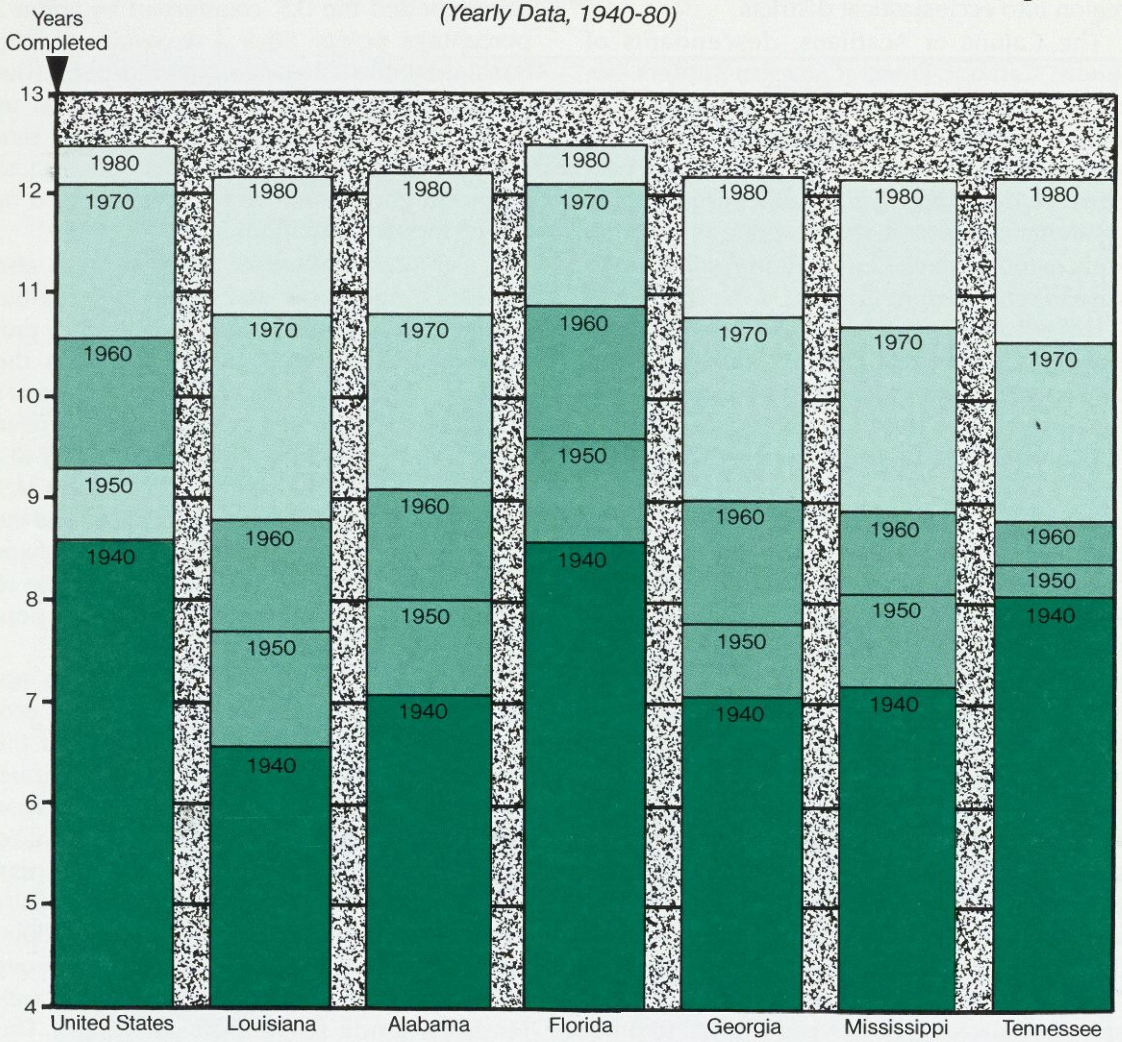
As net migration into the state was negative until the 1970s, when the oil boom began to attract large numbers of workers, Louisiana's rapid population growth was attributable predominantly to natural increase. During the 1950s, Louisiana's birth rate reached its highest level of this century at 28.4 per thousand of the population—20 percent higher than the comparable national rate. Although rates have declined since, the state's figure remains about 15 percent higher than the U.S. average. Consequently, Louisiana has maintained a relatively high ratio of dependents to adult workers. For example, since 1970 Louisiana's population aged 5 to 17 years, the prime school-aged group, has exceeded the U.S. counterpart by about 2 percentage points. Such a dependency ratio translates into a substantially greater burden for educational expenses than is shouldered by most other states. This responsibility in turn compounds the problems of reductions in state and local government revenue brought on by the oil industry downturn.

A significant difference in population also appears at the upper end of the age distribution, in that the elderly constitute a lower proportion of the state's population than the nation's. While the percentage of Louisiana's population aged 65 and over has gradually risen in recent years, by 1986 it had attained only 10.1 percent, still well below the 12.1 percent U.S. level. In fact, the gap between Louisiana and the nation has actually widened since 1970, perhaps because the in-migration occasioned by the oil boom raised the proportions of younger population groups relative to the elderly.

The twofold irregularity in Louisiana's age distribution helps account for the state's economic problems. Funds for support of the elderly, such as Social Security and Medicare, flow from federal sources; funds for education are generated primarily by state tax revenues. Since Louisiana's proportion of the elderly population is low, it receives only limited outside assistance. At the same time, its disproportionate share of the 18-and-under age group subjects Louisiana to above-average demands for state funds to support education. This anomaly has accentuated the budget difficulties for the state during its recent serious recession.

Aside from its cultural composition and age distribution, Louisiana's population is also marked by low educational levels. Owing to the state's past concentration in agriculture, the general need for education was long perceived to be slight. Thus, Louisiana still has one of the lowest levels of education within the southern region. Despite progress in raising median education levels (see Chart 2), by 1980 the percentage of the population that had completed four years of high school was 58 in Louisiana, nearly 20 percent below the comparable figure for the nation as a whole. In fact, this

Chart 2.
Median Years of School Completed Among the Total Population over Age 25
(Yearly Data, 1940-80)



Source: U.S. Department of Commerce, Bureau of the Census, *U.S. Census of Population,* 1950, 1960, 1970, 1980.

figure was even lower than that for the rest of the South as well as for the West, where 75 percent of the population has finished at least four years of high school.

On a *per capita* basis, the state's expenditures for education have averaged within 90 to 100 percent of the nation's average since 1975. On a *per pupil* basis, the state's expenditures have lagged behind the national average. To close its educational gap, Louisiana must somehow raise the priority given education as well as devote more of its resources to financing the education process. Of course, accomplishing the latter has been made doubly difficult by the state's heavy dependence on the oil and gas extraction industry for revenue.

Another area in which Louisiana's population falls below the national average is labor force participation. This may be related to the relatively high proportion of its people with low skill levels, which render them less employable. In fact, a relatively high percentage of the state's population is encompassed within the poverty-level income category. From 1960 to 1980, the

proportion of the population in poverty dropped from 40 percent to 19 percent; even so, the latter figure was still about 50 percent above the nation's. Two traditionally low-income groups, the rural and black components of the population, both exceed the average U.S. proportions for those groups by considerable margins. The state's least advanced educational and skill levels, which tend to correlate with poorer prospects for employability, are found in these low-income population groups.

The rate of female participation in Louisiana's labor force has traditionally fallen short of the nation's average, although the gap has been narrowing in recent years. The demands for child care associated with above-average family sizes, as well as low educational levels and limited opportunities for women in the predominant oil and gas extraction, agricultural, and transportation industries, have been deterrents to increased participation. Around 50 percent of Louisiana's females were active in the labor force in 1985 as compared with about 55 percent nationally. As educational levels rise and as job opportunities broaden beyond agriculture and energy-related enterprises, Louisiana's women can be expected to step up their rate of participation in the state's job force.

Land and Related Natural Resources. After people, land resources have been the next most important influence on Louisiana's development. In earlier periods, agricultural activity was the predominant shaper of the state's economy, and that activity in turn was governed by the quality and availability of land resources. More recently, the discovery and development of mineral resources has been the chief determinant of the state's economic activity. Nonetheless, land and related resources will continue to play an important role in Louisiana's future. It is useful, therefore, to examine the characteristics of that important resource and its impact on the state's economic structure.

Louisiana comprises a total area of about 31 million acres, about 20 percent of which is covered by water, including lakes, streams, and marshlands in regions adjacent to the Gulf of Mexico. Most of the state's soils were formed as submarine deposits laid down relatively recently in geological time. Louisiana's uplands, the oldest soil formations, consist of low, rolling pine-covered hills located in the north-central part of the state, in the southeastern area north of Lake Pontchartrain, and to the west of the Red River on the Texas boundary. Typically, the upland areas are low in fertility, and thus require heavy fertilization. Timber production, along with some livestock, is the current major use of the uplands.

The second most important land category is the alluvial regions within the flood plains of rivers, principally the Mississippi, Ouachita, Red, and Atchafalaya. Earlier in this century, frequent flooding and drainage problems kept the river deltas from intensive agricultural use. Today, with levees and drainage facilities in place, most of Louisiana's field crop production occurs in these alluvial plains, which contain some of the highest known levels of natural fertility.

The coastal prairies and marshlands, located in southern and southwestern Louisiana, constitute the third major category of agricultural land. These lands are underlaid with the state's richest deposits of minerals, including salt, sulphur, oil, and gas. Major agricultural products in the southwestern portion are rice, soybeans, and cattle, while closer to the Mississippi River and nearer the Gulf, rice and sugarcane predominate. The marshes also are important for producing fish, seafood, fur-bearing animals, and many species of waterfowl. A significant new industry involving commercial production of fish and seafood species is emerging in these lowland areas, where necessary water, both fresh and salt, is abundantly available.

Overview of Major Industries

The historical development of Louisiana's major industries has in large part dictated its current economic activity. A look at the growth of agriculture, mining, manufacturing, and transportation and how they have changed over the years can help chart the future course for the state's economy.

Agriculture. As indicated above, the availability of land resources dictated the development of agriculture, Louisiana's first major industry. The state's climate—semi-tropical with relatively abundant rainfall—has rendered some aspects of its agricultural production distinctive. For example, until the recent growth of the

sugarcane industry in Florida, Louisiana typically accounted for the majority of U.S. sugarcane production since the early nineteenth century. The south-central area of the state meets the crop's demanding temperature and soil requirements. Strict import quotas and price supports have maintained the sugarcane enterprise as one of the state's most profitable crops, responsible for from 7 to 10 percent of total farm cash receipts. As long as sugarcane remains protected, it will continue to be a vital element in Louisiana's agriculture.

Cotton is another historically important crop dating back to the earliest days of the state's existence. Much of the rural economy depended almost solely on expenditures for labor and materials used in cotton production and on the income received from the marketed crop. Likewise, the population of rural areas was determined by the needs for hand labor to produce and harvest cotton. Although cotton acreage has shrunk to less than one-third its previous size, it still leads Louisiana's farm cash receipts, with approximately 15 percent of the total.

Rice, a relative latecomer to the state's agricultural scene, plays a key role nonetheless. Rice is adapted to the soils of southwestern Louisiana where an impervious subsoil holds water in the surface layers and aids irrigated production. The planted area, which had hovered around 500,000 acres since 1940, dropped nearer to 400,000 acres in this decade as the U.S. share of international markets began to shrink. In more normal times, about 60 percent of Louisiana's total rice crop moves into the world market, yielding cash receipts that account for about 10 percent of the farm total.

Mining. Louisiana's mining industry, which has come to dominate its economic activity, dates only from the discovery of the state's substantial mineral resources in the early 1900s. Oil was first discovered in southwestern and south-central Louisiana in 1901, and in 1916 natural gas was found in the north-central area of the state. Since then, underground petroleum deposits have been detected in almost every parish. Deposits are most highly concentrated in a relatively narrow belt across southern Louisiana and extending beneath the Gulf of Mexico. Including these off-shore areas, Louisiana holds a considerable share of U.S. reserves of natural gas and petroleum.

Sizable deposits of salt and sulphur have been located in conjunction with petroleum reserves in the southern coastal areas. Before the oil industry began its rapid expansion in the late 1940s and early 1950s, employment in nonpetroleum mining activities, principally salt and sulphur recovery, composed around 15 percent of the total mining work force. Since then, nonpetroleum mining employment has held relatively stable while oil and gas industry employment skyrocketed, particularly in the late 1970s. Even though sulphur and salt mining account for less than 5 percent of mining employment, Louisiana leads the salt-producing states and ranks second only to Texas in sulphur production.

Louisiana also holds second place nationally in the value of total mineral production. About one-fifth of the state's gross product derives from mining activity, including chiefly petroleum and natural gas. The large volume of output from the oil and natural gas wells in Louisiana's southern region has broadly influenced most other types of economic activity in the state as well.

"The large volume of output from the oil and natural gas wells in Louisiana's southern region has broadly influenced most other types of economic activity in the state as well."

Manufacturing. Of all the state's sectors, manufacturing has perhaps felt the greatest impact from the oil and gas extraction industries. Once strongly oriented to the agricultural and forestry industries, manufacturing now depends on chemicals and petroleum as the bases for the state's prime industrial products. Chemical manufacturing, which ranked as Louisiana's foremost industry in terms of employment, value added, and new capital expenditures throughout the 1970s, has been especially important to the economies of Lake

Charles, New Orleans, and Baton Rouge. Bested in its competition with foreign producers during the 1980s, the state's chemicals industry shrank markedly in terms of employment. However, with the decline of the dollar and restructuring of the industry to reduce labor intensity, Louisiana's chemical manufacturing sector has at last begun a recovery.

Petroleum refining, Louisiana's second most vital industry, centers, of course, where crude petroleum is available. Baton Rouge, Lake Charles, and New Orleans all have large refineries that wield major influence over their economies. Though not as widely dispersed as other types of manufacturing, petroleum refining ranks next to chemicals manufacturing as a source of the state's total value added by manufacturing activity.

"The simultaneous downturn in the agriculture, transportation, and chemical manufacturing sectors, along with the collapse in the energy sector, led to a greater reversal than the state's other sectors could overcome."

Third in importance among Louisiana's industries is food processing. The state's relatively large rice and sugarcane crops account for the majority of the processing, but livestock, fish and seafood, and dairy products also provide significant sources for the state's industry. As mechanization has reduced the number of workers needed to handle a relatively stable volume of food products, Louisiana's food processing industry has lost between 1,200 and 1,500 workers annually since 1970. More recently, though, there have been some indications of modest gains in employment, possibly due to the expanding role of fish and seafood production in the state's food sector.

Historically, forest products, the fourth major manufacturing industry, have played a significant part in Louisiana's economy. Before the major river systems' flood plains were cleared and drained for field crop production, the timber in these vast areas was harvested for lumber and building products. The advent of technology to mass process wood pulp into paper rendered Louisiana's forests even more valuable as a source for pulpwood production. Employment in the forest products industry, including paper, has declined rapidly since the early 1970s with the rapid adoption of mechanization and labor-saving techniques. Even though total pulpwood production is from four to five times greater than it was in the 1950s, employment has dropped about 30 percent since around 1973.

Transportation. While not as large as Louisiana's other industries, transportation is of long-standing importance in the state's economy. Well before statehood was achieved, the shipping of goods and people along the waterways of the region constituted a major economic activity: boats carried the explorers and the settlers into the territory and the furs and agricultural goods out to markets, largely through the port of New Orleans.

At the same time that the rivers were a boon to Louisiana, they also posed a massive obstacle to its early development. Until the first bridges were built in the 1930s, overland transportation was made extremely difficult by wide river expanses which had to be traversed by ferries. The great width of the Mississippi River dramatically increased the cost of bridging it, and so east-to-west transportation in the state was severely hindered. Not until the second half of this century did a sufficient number of bridges become available. Possibly owing to its dependence on the river systems, Louisiana still suffers from a lack of major north-south highways. Various proposals have been forwarded for an intrastate north-south roadway that would link up with the national interstate highway system.

Metropolitan Response to Recession

Overall, Louisiana's economy is tied too closely to a few major industries that are subject to radical cyclical swings. The simultaneous downturn in the agriculture, transportation, and chemical manufacturing sectors, along with the collapse in the energy sector, led to a greater reversal than the state's other sectors could overcome.

Table 1.
Louisiana's Population and Employment by Area

Area	Population 1986 (thousands)	Percentage of State Population	Total Employment 1987* (thousands)	Annual Employment Change (percent) 1984	1985	1986	1987*
Alexandria	140	3	55	2.9	0.7	4.2	2.6
Baton Rouge	575	12	238	3.3	2.7	0.6	1.5
Lafayette	241	5	88	7.5	-3.6	-8.3	-5.7
Lake Charles	175	4	66	18.7	-0.5	-0.3	1.7
Monroe	149	3	63	4.0	4.1	1.5	0.0
New Orleans	1,385	30	539	2.4	-0.8	-0.5	-0.5
Shreveport	372	8	147	4.5	1.8	-3.6	-1.5
State	4,501	—	1,764	3.6	0.6	-1.8	-0.4

*Preliminary

Sources: U.S. Department of Commerce, Bureau of the Census, and reports from state employment office.

The need for diversification is made yet more clear when the performance of Louisiana's leading metropolitan areas is compared. As expected, those cities whose employment base was least homogeneous were best able to weather the state's recession (see Table 1).

Lafayette, Shreveport, New Orleans, and Lake Charles, cities which experienced the most serious employment declines, all have a relatively high proportion of total employment in mining. The figure for Lafayette is 20 percent, while in the other areas mining ranges between 4.0 percent and 5.2 percent of total employment. Although the proportions for Shreveport, New Orleans, and Lake Charles do not seem inordinately high, so many of the other employment categories in these cities are mining-related that the decline in that sector pulled down virtually all the rest. By contrast, in the three metropolitan areas whose employment growth has merely slowed since 1984—namely Baton Rouge, Alexandria, and Monroe—mining accounts for under 1.5 percent of total employment. Thus, it is clear that the degree of concentration in mining or energy production strongly influenced how much hardship the energy price collapse inflicted on a metropolitan area.

Other differences between the worst-hit areas and those whose employment growth persisted during the recession lay in their types and amounts of manufacturing employment. Both Lafayette and Shreveport, for example, had low overall levels of manufacturing compared with the other cities, and both suffered serious employment losses. Furthermore, areas with higher concentrations of manufacturing employment in nondurable goods industries fared better than those, such as Shreveport, where durable goods dominated the manufacturing sector. Lake Charles appears to be the only exception: it posted an employment loss yet had the greatest concentration in nondurables employment. This irregularity is explained, however, by the fact that chemical products made up nearly all of nondurables employment in Lake Charles, as well as most of its total manufacturing employment. As mentioned earlier, chemicals' loss of its competitive position both in domestic and international markets coincided with the downturn in the petroleum sector. Baton Rouge, the only other metropolitan area with relatively large chemical manufacturing employment, had enough other types of manufacturing activity to ward off the plight suffered by the Lake Charles economy.

High concentrations of employment in the transportation industry also marked those cities that performed most poorly during the recent economic contraction. New Orleans leads the state with nearly 10 percent of its employment

in transportation, particularly water transportation. The nation's loss of markets abroad, especially for agricultural commodities, which are unusually important to New Orleans, led to contraction of shipping exports through the port. Combined with the reversal in the oil industry, this shrinkage dealt the city's transportation sector an especially hard blow. The decline in agricultural, oil, and petrochemical transportation also shook the economies of Lafayette, Lake Charles, and Shreveport, Louisiana cities with the next highest concentrations in transportation jobs.

Two other sectors that appeared to be related to metropolitan differences in economic performance were government and finance, insurance, and real estate. The government sector, although faltering itself, also acted as a buffer in those areas that were hardest hit. This was especially true where federal employees made up larger shares of the total, for their jobs, hinging less directly on local economic activity, typically continue even when the nongovernment sectors are in recession. In the Alexandria economy, for instance, government employment, boosted by a military installation, composes 29 percent of the total, the highest of any in the state and far above Louisiana's 18 percent average. With its heavy ratio of federal government employment, Alexandria withstood the economic setback relatively well. Although Baton Rouge's and Monroe's 20 percent government employment is concentrated more in state than in federal government jobs, those two cities also fared reasonably well. In Lafayette, by contrast, government jobs make up only 11 percent of the total; for Lake Charles, New Orleans, and Shreveport the figures are between 16 and 17 percent.

A concentration of employment in the financial sector is another characteristic of those regions that have performed relatively well. For example, Monroe, the city that was least affected by the downturn in Louisiana's economy, had the state's highest concentration in financial employment. At 7.4 percent, Monroe's figure was more than double Lafayette's proportion of only 3.6 percent. Alexandria's and Baton Rouge's employment in financial industries surpasses the levels for all the remaining cities except New Orleans. Even though that city is the traditional financial center for the state, its excessive oil- and shipping-related debt burden worked against this advantage. Nevertheless, the financial sector kept the New Orleans economy from slumping as much as it would have otherwise.

Long-Run Prospects for Louisiana's Economy

With Louisiana finally beginning to recover from the longest and deepest recession since state data first were kept, many questions are being asked concerning its economic future. Today, it is widely recognized that the state's economy has been far too dependent upon the oil and gas extraction industries and that the basic economic structure must change before there can be hope for its renewed vitality. The state now has to determine which types of economic activity can replace oil and how best to achieve its goal of diversification. As reorganization efforts get under way, it should not be overlooked that, just as basic economic forces have shaped the structure of Louisiana's economy in the past, its future form will depend largely on the state's comparative economic advantages.

Despite the attention currently being focused on diversification, oil and gas extraction surely will remain an important economic activity. In addition to existing oil and gas reserves, new reserves are likely to be found, especially in the off-shore area, as exploration picks up again with an oil price rebound to profitable levels. It is unlikely that exploration activity will proceed at the heady pace that prevailed prior to the industry's collapse; nonetheless, it will move ahead as the promise of returns from new discoveries encourages those ventures. The return of oil prices to the vicinity of $20 per barrel in 1987 was sufficient to activate a number of rigs that were idled in 1986 when oil prices dropped as low as $10 per barrel. Some expect that prices could reach as high as $26 per barrel early in the 1990s, as rising consumption begins to press against declining oil availability. This prospect argues strongly for the revival of Louisiana's oil and gas extraction industry and its probable healthy state into the next century. Resources generated during the next profitable period could be channeled toward diversifying the economy through development of secondary

and tertiary industries as spin-offs from the energy sector.

Louisiana's long-standing agricultural enterprises owe their existence to the special economic advantages afforded by the state's climate and soil conditions. For example, the high yields obtained in the fertile river valleys have permitted Louisiana to maintain cotton production during periods of low cotton prices, and they are likely to continue doing so in the years ahead. Similarly, the warm climate, abundant rainfall, and fertile soils in south-central Louisiana have provided the state a comparative advantage in the production of sugarcane. Although it is doubtful whether much of the industry would survive without its current government protections, it is equally unlikely that those protections will be abruptly withdrawn. Thus, Louisiana should continue to be an important sugar producer, and the industry's attendant processing and refining activities will remain a part of the state's economic activity.

Over the past, the special advantages of soil composition, flat terrain, and readily available water supplies have given Louisiana the edge in rice production. Apparently, the rice industry will persist in the state as long as the crop is produced anywhere in the nation. The industry will require continuing access to foreign markets, for a large share of the crop has traditionally been exported and prospects are dim for expanded domestic consumption. The substantial decline of the dollar over the last three years against many foreign currencies bodes favorably for an increase in foreign marketing of rice.

Beef cattle will remain an important enterprise since the state has large areas of marginal land for which forage production is the highest potential economic use. The extensive marshy areas that cannot be brought under crop cultivation, the hilly areas subject to serious erosion, and the idle crop lands in rotation systems provide a sufficient base for Louisiana to retain a substantial cattle production enterprise in the future.

Forest resources will offer another growing source of economic activity in the years ahead. The 40 percent of Louisiana's total land area now in tree production represents a sizable potential for increased output. Advances in tree-producing technology, which speed up growth and yield from forest areas, give Louisiana an opportunity to expand manufacturing activity in all facets of wood products. Pulpwood production for use in paper manufacturing, traditionally a significant state industry, probably will advance in coming decades. Forest products manufacturing provides an additional opportunity for the state to diversify away from its current concentration in durable goods manufacturing activities that are heavily dependent on the oil and gas industry.

Expansion in the nondurable areas other than chemicals may be another avenue for further economic diversification. Food products manufacturing, for example, is prime for stepped-up development in the state, and the aquaculture industry, in particular, is exceptionally promising for Louisiana. In the past, the state's fish and seafood industries have been oriented largely toward harvesting the natural production that occurs in the native aquatic habitat. However, technological developments have made possible the commercial production of several species of aquatic life forms that are especially adaptable to the marshy environment of south Louisiana. The burgeoning national and international markets for fish and seafood products seem to promise a lucrative future for products in which Louisiana has special advantages. The aquaculture industry and attendant food manufacturing activities may well lead Louisiana's growth industries in the years ahead.

The state's river systems and canals offer opportunities for further gain in water transportation and related businesses. Again, Louisiana's location astride the opening of the Mississippi River into the Gulf of Mexico grants it access to far more shipping and port activities than are available to neighboring states. Handling river freight has long been an important business in Louisiana, particularly in New Orleans, whose port handles both import and export trade. Since many of the products passing through the port are processed either after reaching their destinations or prior to their arrival in the state, Louisiana may reap future rewards if it can secure a larger share of this processing. Moreover, additional secondary and tertiary industries could then arise to support the primary shipping and secondary processing activities.

One example of business generated by water transportation and port activity is the financing

of international trade. Louisiana is in an advantageous position to play an expanding role in international trade activities, particularly with Central and South America. The past availability of profitable oil-related business meant that financial institutions had no pressing need to develop business in the international arena. However, because those cities with the largest proportions of financial employment tended to resist the economic downturn somewhat better, increased involvement in financing international trade may be another promising way of augmenting the breadth of Louisiana's economy.

As Louisiana enlarges its role in the international business arena, foreign visitors should become a stronger factor in the state's tourism industry. The unique ethnic and cultural mix of Louisiana's population and the old world flavor of New Orleans architecture offer a tourist attraction unrivaled in southern states. In the past the state has evinced a certain complacency about its tourism; consequently, Louisiana has not promoted its attractions, either here or abroad, to maximize its tourism potential. Sustained efforts to attract a continuous flow of visitors to Louisiana probably would reap superior gains to a major one-time push, such as the recent promotional effort for the New Orleans World's Fair.

Policy Demands. The thrust of state governmental policy should be to help residents position themselves to seize economic opportunities. To achieve long-lasting gains in economic growth and development, Louisiana must intensify its efforts to upgrade the education and skill levels of its population. Otherwise, the state cannot hope to compete with other areas of the country in attracting badly needed businesses. Not only do such businesses seek an educated resident work force, but the personnel who relocate with a company demand quality educational opportunities for their children.

Unfortunately, in recent years budget deficits have led to cuts in assistance to education. Therefore, the already formidable task of making resources available to upgrade the state's educational level to that of the nation—not to mention the levels of the country's foremost regions—has been made more daunting still. Accomplishing that task means that residents must be willing to vote for increased taxes on individuals rather than on businesses, and to look to broader sources of revenue than the oil and gas extraction severance taxes.

Businesses are taxed more heavily in Louisiana than in other southern states. Such taxes make up 22 percent of the state's total taxes less mineral revenues, a substantially higher figure than Tennessee's 16.5 percent and almost triple North Carolina's 7.9 percent. Disproportionate business taxes can obviously pose a considerable obstacle to economic development. For this reason businesses must either absorb these higher taxes or somehow pass them on to others, perhaps through higher prices, lower wages, or lower rents or bid prices.

Another problem of Louisiana's tax structure is the cyclicality that exaggerates the economy's positive and negative swings. While it probably is not possible or even desirable to eliminate cyclicality, finding ways to moderate the swings would be helpful. One possible approach would be to focus business taxes on the value added by business rather than on sales taxes on business purchases—the most cyclical of all the business tax bases—and on corporate income. A lack of economic diversification also aggravates cyclicality in tax revenue. When an economy rests on a broader spectrum of businesses, it is less likely that all will be affected simultaneously by the same economic factors. Obviously, Louisiana's imbalanced dependence on the oil industry has exposed it to the vagaries of the special set of circumstances that bear on the energy economy.

The collapse in the energy sector so curtailed government revenue that money was not available to meet all of Louisiana's highest priority expenditures. Hence, the devastating cut in funds for education, along with many other worthwhile programs, ensued. Although Louisiana ranks 36th nationally in taxes paid per capita, about the same as its ranking in personal income per capita, its taxes on real estate are inordinately low. The property tax is a clear candidate for raising some desperately needed revenue for state and local governments. Such taxes would be less volatile sources of funds than the severance taxes on natural resources or even the personal income tax. That sort of improvement in the balance of public finance revenues should characterize Louisiana's economy of the future.

Conclusion

As difficult as they have been for Louisiana's economy, the hardships ushered in by the plunge in oil prices may provide the long-needed incentive to diversify and strike a better balance in sources of revenue for government. The oil industry will continue to play a key role in Louisiana's future, but other sectors will rise in importance as entrepreneurs search out less volatile, and in the long run more profitable, alternatives. This shift will give additional impetus to the development of those human resources that are needed both to attract and to further alternative economic activities.

The future structure of Louisiana's economy will more closely resemble that of its sister southern states that have managed to rebound from the national recessions of the early 1980s. At the same time that the state gives greater emphasis to traditional enterprises whose economic advantages have not been fully realized, it will foster new enterprises that can harness the economic advantages emerging from new technologies. The next decade should see a decided shift in the mix of Louisiana's economy toward a more balanced, recession-resistant structure. At least by the close of the century, Louisiana should be well along the road toward upgrading its labor force entrants so that the state can compete with greater success.

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